

SECRET

ENGINEERING SUPPORT PROJECTS

The submission of our fiscal year 1973 Congressional Budget included \$1.9 million for engineering support projects, primarily to correct deficiencies and improve the operation of utility systems in the Agency which support special-use areas and general office areas. It is our understanding that OMB approved \$700,000 of this amount and the Office of Planning, Programming, and Budgeting (O/PPB) has agreed to surge fund \$435,000 of this latter amount in FY 1972. In view of the limited OMB approval, we have reprogrammed the unfunded (\$1.2 million) projects from FY 1973 to FY 1974. In addition, our FY 1974 submission includes an amount for additional projects which was part of our long-range plans as well as new ones which have surfaced in the past year. In order to place the whole program in perspective, the following sets forth by fiscal year, starting in FY 1972, the planned projects, explanations thereof, and the estimated cost.

Fiscal Year 1972

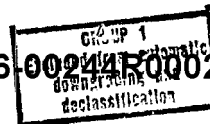
(Surge Funding Approved by O/PPB)

1. HVAC Redundancy and Feasibility Studies \$350,000

A survey and an analysis will be conducted on the heating, ventilating, and air conditioning (HVAC) in special-use areas and the general office space. Its purpose will be to validate present capacity and determine efficiency, reliability, and the life expectancy of the systems. The HVAC systems in some special-use areas have no backup and are neither autonomous nor automatic. Failures of HVAC systems for extended periods of time disrupt operations and can cause serious damage to expensive equipment. GSA has limited capability and is reticent to accept responsibility for special-use area HVAC requirements.

An additional goal is to improve the basic house system for general office space. Original design deficiencies in the house HVAC system result in poor air distribution. In addition, space usage (special-use versus general office) has changed drastically since construction. This has resulted in major air-balancing problems and a deficiency of adequate cooling air in many areas. In some areas, portable fans/heaters are required to augment

SECRET



SECRET

-2-

the basic system, while in other areas supplemental cooling units are required to augment the basic system. These studies will provide sound requirements for GSA implementation.

2. Installation of Mimic Bus for Signal Center and Office of Computer Services\$ 30,000

These electrical power configuration display panels will enable operating personnel to monitor their power systems supporting operations at all times and will permit necessary switching and control in the event of electrical failures.

25X1A 3. Building Utility Systems Modifications\$ 55,000

25X1A

In addition to the Headquarters Building problems with HVAC, which will be defined in the survey to be conducted, problems have already been identified in some of our other buildings in the metropolitan area and must be corrected. One of our most serious areas is in the Building. The HVAC system is extremely inadequate and a source of constant complaint from personnel located there. To supplement the system, personnel have installed heaters and/or fans to improve their environment. To correct these problems, a complete rebalancing of the system is required and the installation of two new heavy-duty compressors (the present commercial type is inadequate to support the building and the 24-hour operational areas).

Fiscal Year 1973

1. Outside Engineering, Design, and Consulting\$170,000

A requirement exists for consultation, technical investigation, feasibility studies, and design efforts by consulting firms to solve problems beyond GSA or in-house assets. Examples of problems are special power apparatus and controls for our computer and communication centers, vibration studies, emergency power for special-use areas, HVAC deficiencies in buildings other than Headquarters, and correction of fire or safety hazards requiring technical solutions. In the first half of the current fiscal year, we have committed approximately \$80,000 for such efforts. These included correction of 25X1A problems, water filters for PSD, installation of air compressors to emergency power, installation of sump pumps, consulting engineers on lighting and sound systems for the auditorium, consulting engineering for correction of Building HVAC deficiencies, etc.

25X1A

SECRET

-3-

Further, it is anticipated that as the surge-funded HVAC studies to be initiated in FY 1972 progress, more immediate problems will be identified and corrective recommendations made for correcting Headquarters Building deficiencies. With respect to the house system, we are confident that these recommendations will be concerned with the air-distribution systems. Two previous major contracts to improve the HVAC systems were concerned with the water balance and air balance in the machine rooms. Efforts were required to design suitable improvements in the way of supplemental air handlers, cooling, heating, and humidification systems. We foresee similar efforts as a result of the HVAC studies.

2. Increase Transformer Capacity, 250 kw.
Frantic Power Generator \$ 5,000

At the present time, the 250 kw. generator cannot safely and reliably deliver its full power to frantic loads due to an electric filter installed for communications security purposes which, in turn, degrades the output of the present transformer due to inductive and capacitive characteristics of the distribution system and the filter. The installation of a larger transformer will correct this situation and permit the use of the 250 kw. generator to its full capacity.

3. Emergency Generator - South Building \$ 35,000

The existing emergency generator provides power to the telephone frame room, stairway lighting, and various alarm systems. The Technical Services Division has requested that the emergency power capacity for their complex be increased to cover additional requirements. The present system is over 16 years old with little remaining life expectancy. It is proposed to install a new generator to meet these needs.

4. Isolate Critical Electrical Loads from Noncritical Electric Loads.. \$ 70,000

Growth of computer facilities has increased the critical electrical loads to near capacity of the 2500 kw. generator and has overloaded electrical B Vault. The \$300,000 of FY 1971 funds previously authorized for expansion of B Vault will alleviate the B Vault overloading, and will somewhat reduce the load on the 2500 kw. unit. However, loads may be better balanced and allocated between the various systems (critical, emergency, and commercial) by manipulating various loads between A and B Vaults. Vault A has only critical and commercial power available. After the \$300,000 expansion project is complete, B Vault will have critical, emergency, and commercial power available. It is, therefore, proposed to supply a source of emergency power from B Vault to

SECRET

-4-

A Vault to serve select loads presently energized by the critical power source in A Vault. The transferring of select loads from A Vault critical to emergency power source would reduce the load of the 2500 kv. unit, allowing for safer, more reliable operation and providing an ability to immediately respond to future requirements for critical power.

5. Monitoring Instruments, Spare Parts, and Supplies for Use in Special-Use Areas \$ 15,000

To render supplemental assistance to GSA in the operation, maintenance, and trouble shooting of utility systems for special-use areas, we will require acquisition of small amounts of test monitoring instruments, small expendable spare parts, and engineering supplies.

6. Limited Repair, Alterations, Maintenance, and Operation of Special-Use Areas \$ 20,000

GSA considers many of the utility support systems to special-use areas as beyond their responsibility and capability to maintain. Accordingly, it is necessary that we have funds available to effect such repairs and maintenance, either by direct contract or by reimbursement to GSA where they have at least the capability.

TOTAL Fiscal Year 1973 \$315,000

Fiscal Year 1974

1. Outside Engineering, Design, and Consulting \$170,000

We continue to foresee a need for this type of service as set forth in Item 1 of FY 1973. There will be a continuing requirement to analyze and design solutions for complex electrical and other utility system problems as well as the one-time special or unique requirements. As components expand, contract, or move around, particularly with respect to special equipment and machine areas, engineering problems beyond GSA or in-house assets develop and must be solved.

2. Alterations to House HVAC System Serving Special-Use/General Office Areas \$325,000

The studies of the HVAC systems initiated in FY 1972 will recommend improvements which should be made in the systems which serve special-use areas and general office areas. Nearly all of the improvements will be outside of GSA's charter obligation for operation and maintenance or, at the minimum, a definite reluctance on

SECRET

SECRET

Approved For Release 2000/09/14 : CIA-RDP86-00244R000200520006-2

-5-

their part to assume budgetary responsibility in a timely manner. Until the studies and recommendations are submitted, the scope and depth of the improvements will remain unknown. Although, as mentioned previously, we fully anticipate much of the improvements recommended will be concerned with the air-distribution systems throughout the building, we expect these recommendations will call for major changes in the duct configuration, both hot and cold carriers. The present configurations have extremely long runs and many turns which result in efficiency losses and poor humidity control. It may also be necessary to install supplementary units in the duct work to overcome these problems. In any event, whether the changes are made or not, the system needs to be rebalanced.

Our cost estimates are based upon some degree of prior experience. The two major contracts mentioned in Item 1, FY 1973, for correction of water and air-balancing problems in machine rooms cost between \$210,000 and \$240,000 each. Any major re-balancing of systems could easily run this much and more. In addition, we anticipate the studies will recommend either the replacement of it or supplementary major equipment and controls in the system due to reliability factors or ones of obsolescence or life expectancy and have, therefore, included approximately \$100,000 hereunder for such costs.

Although much of the total work involved could rightly be interpreted as a partial responsibility of GSA, we see little likelihood of their accepting this responsibility due to lack of funds and their present thinking that systems serving special-use areas are not within their normal responsibilities.

3. Provision of Redundant Autonomous and Automatic Operation of HVAC Systems in Special-Use Areas..... \$396,000

The Agency's goal is to provide continuous utility service to special-use areas without being dependent upon the extremely limited capabilities of the GSA operating forces and without regard to any likelihood of malfunction of the "house" systems or commercial power failures. "Continuous" means backup availability in case of malfunction of the primary system; automatic switching to the backup system (and automatic switchback); and the capability of the backup system to operate indefinitely on its own if need be.

The following systems are now known to require redundant and/or autonomous and automatic HVAC operational capability. The dollar values are engineering estimates and indicate approximate magnitude only. Final costs will be dependent upon results of the HVAC studies.

Approved For Release 2000/09/14 : CIA-RDP86-00244R000200520006-2

SECRET

25X1A

Approved For Release 2000/09/14 : CIA-RDP86-00244R000200520006-2

Next 1 Page(s) In Document Exempt

Approved For Release 2000/09/14 : CIA-RDP86-00244R000200520006-2

SECRET

-8-

The instrumentation will include:

- a. Remotely located monitoring devices which are manned at all times for backup of the air-conditioning system;
- b. Replacement of unreliable control panel components;
- c. Repair of control panels in all fan rooms; and
- d. Installation of flow-measuring devices for the chiller units located in the powerhouse.

6. Replacement of Throwaway Condensing Water HVAC Units.....\$ 60,000

A number of the supplemental cooling units located at Headquarters use domestic water for cooling and drain directly into the sanitary sewer. This practice is both contrary to building codes and wasteful. Further, if the major watermain serving the complex were to fail, the consumption would quickly exhaust our reserve water capacity in the tower. It is proposed to replace these units with units integrated into the closed loop chilled water systems within the Headquarters complex. The total load is 80 tons or less and is well within the capacity of our present chillers and cooling tower.

7. Install Simulated Model of Headquarters Electrical Power Feeders and Control System \$ 75,000

It is proposed to design and construct a simulated model of the electrical system and controls of the Headquarters power system for use as a training and familiarization aid to GSA and Agency operating and engineering personnel. This device will enable us to provide training for emergency and troubleshooting activities without the necessity of incurring an actual power outage and the disruptive associated effects.

8. Provide Electric Power from the Critical Engineering 2500 kw. Generator to Essential Powerhouse Equipment \$ 35,000

It is proposed to run power directly from the 2500 kw. generator to certain powerhouse equipment such as the boilers and water pumps. This equipment is presently backed up by the 2000 kw. emergency generators; however, in the event of a power failure, approximately 15 minutes is required to bring these generators on line. Loss of power to the boilers and auxiliary equipment for this time causes complete loss of steam, which is

SECRET

25X1A

Approved For Release 2000/09/14 : CIA-RDP86-00244R000200520006-2

Approved For Release 2000/09/14 : CIA-RDP86-00244R000200520006-2

-10-

25X1A

12. Replace Compressed Air Pipes and Compressors in the PSD Building..... \$ 35,000

The present system of air compressors and iron pipes is in need of replacement. The compressors introduce water and oil into the lines and in turn the iron pipes are subject to rust. The compressor must be replaced with an oilless type system and the pipes changed to copper. The present system has serious effects on the quality of work generated by PSD.

13. As-Built Drawings\$100,000

Current drawings of our major utility systems are not available, particularly those relating to controls, alarms, switchgear, and maintenance. It is proposed to initiate a program to generate or bring up to date the drawings covering the above for Headquarters and other buildings in the metropolitan area. Up-to-date drawings will increase the speed and accuracy of all future work and are particularly vital to fire and security alarm systems and to electrical and mechanical support systems.

25X1A

Approved For Release 2000/09/14 : CIA-RDP86-00244R000200520006-2

Next 1 Page(s) In Document Exempt

Approved For Release 2000/09/14 : CIA-RDP86-00244R000200520006-2